



# Oregon

John A. Kitzhaber, M.D., Governor

Department of Environmental Quality

811 SW Sixth Avenue  
Portland, OR 97204-1390  
(503) 229-5696  
TDD (503) 229-6993

PORSE  
11-3-2581V3  
10/8/99

October 8, 1999

cc: Mat Cusma  
Ross R.  
Joan S.

Mr. Robert Phillip  
President  
Crawford Street Corporation  
3200 N.W. Yeon Street  
Portland, Oregon 97210

Re: Crawford Street Site: Request for Performance of  
Preliminary Assessment with Sampling

Dear Mr. Phillip:

This letter informs you of the results of our review of information regarding hazardous substance contamination at the Crawford Street facility located at 8424 N. Crawford Street in Portland, Oregon. The Oregon Department of Environmental Quality (DEQ) has determined that the Crawford Street site is a high priority for a preliminary assessment with sampling and requests that Crawford Street Corporation perform a preliminary assessment with sampling in accordance with the Environmental Cleanup Law, Oregon Revised Statutes (ORS) 465.200 *et seq.*

The Crawford Street facility is located within or near a portion of the Willamette River known as the Portland Harbor. A 1997 investigation revealed significant contamination of sediments within the harbor. DEQ has undertaken review of available information regarding properties throughout the harbor to identify potential sources of the sediment contamination. The results of DEQ's review for the Crawford Street facility are summarized in the enclosed Strategy Recommendation

Based on this review, DEQ has determined additional information is necessary to determine whether hazardous substances have been released or threaten to be released at the Crawford Street facility and come to be located in Willamette River sediments. The preliminary assessment with sampling will fully evaluate all upland, in-water and over-water activities that might have resulted in the release of hazardous substances and include sufficient sampling to assess whether hazardous substances have come to be located in Willamette River sediments at or near the Crawford Street facility. At a minimum, sampling will include the collection of surface and subsurface sediment samples at appropriate points adjacent to the Crawford Street facility.

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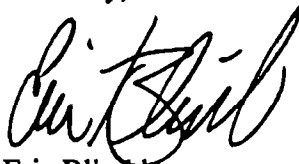
DEQ proposes that your performance of the preliminary assessment with sampling be governed by the enclosed Voluntary Cleanup Letter Agreement. The facility's preliminary assessment with sampling will be coordinated with harbor-wide sediments investigations currently being pursued by DEQ. This will require commencement of the preliminary assessment with sampling at the Crawford Street facility in the near future. DEQ therefore requests that you review the enclosed Strategy Recommendation and Voluntary Cleanup Letter Agreement, and inform DEQ whether you will perform a preliminary assessment with sampling by signing and returning one original of the enclosed Voluntary Cleanup Letter Agreement within 30 calendar days of mailing of this letter. Please retain one signed original for your records. It is DEQ's expectation that a preliminary assessment and sampling work plan will be completed and submitted to DEQ within six weeks of signing the Voluntary Cleanup Letter Agreement.

Should you not agree to perform the preliminary assessment with sampling by execution of the Voluntary Cleanup Letter Agreement, DEQ will assume you are not willing to perform the requested work. In this case, as with other facilities within the Portland Harbor, DEQ will complete the preliminary assessment with sampling itself, with subsequent cost recovery from liable parties.

Finally, please be advised that DEQ is required by ORS 465.330 to recover remedial action costs incurred by DEQ, including for site assessment activities. You will be receiving an invoice in the near future for DEQ's costs of preparing the Strategy Recommendation for the Crawford Street facility. Reimbursement of future DEQ costs will be provided through the Voluntary Cleanup Letter Agreement for the facility, if one is entered.

Please Contact me at 503 229-5648 if you have any questions regarding the enclosed Strategy Recommendation .

Sincerely,



Eric Blischke,  
Coordinator  
Portland Harbor Study Area  
Waste Management and Cleanup Division

Enclosures

c: Kurt Burkholder, DOJ  
Dave St. Louis, Manager, NWR Site Assessment Program  
Mike Rosen, NWR Voluntary Cleanup Program  
Gil Wistar, Coordinator, Site Assessment Program  
ESCI File No.: 2363

**DEQ SITE ASSESSMENT PROGRAM - STRATEGY RECOMMENDATION**

**Site Name:** Crawford Street Corporation, including:  
Columbia Forge and Machine Works, Inc.  
Lampros Steel, Inc.  
TLS Steel Products, Inc.

**Site CERCLIS Number:** (none)

**DEQ ECSI Number:** 2363

**Site Address:** 8424 N. Crawford Street  
Portland, Oregon 97203

**Recommendation By:** Tom Gainer, Voluntary Cleanup and  
Site Assessment Section, DEQ Northwest  
Region

**Approved By:** Michael E. Rosen, Portland Harbor  
Manager, DEQ Northwest Region **EB FOR HER**

**Date:** October 1, 1999

**NOTE:** This site (Figure 1) is within a 6-mile stretch of the Lower Willamette River in which the U.S. Environmental Protection Agency (EPA) conducted a sediment study in 1997. This area, referred to as the *Portland Harbor*, is between the upstream ends of Sauvie Island (River Mile 3.5) and Swan Island (RM 9.5). The purpose of this Strategy Recommendation is to determine whether a specific hazardous substance release or a specific past operation at the site can be linked to contamination documented by EPA in sediments adjacent to the site. Because of this focus, the Strategy Recommendation may omit some historical site information, regulatory issues, or further-action conclusions that might otherwise be included in a DEQ Strategy Recommendation.

**Background, Portland Harbor Sediment Evaluation**

In September and October 1997, EPA's contractor, Roy F. Weston, Inc., collected 187 near-shore sediment samples within the Portland Harbor area defined above. Most samples (150) were collected as shallow grab samples within the upper 6 to 17 centimeters (cm) of sediments. 37 deeper composite core samples, from depths of between 55 and 139 cm, were also collected. All samples were analyzed for total metals, semi-volatile organic compounds (SVOCs), total organic

carbon (TOC), and sediment grain size. Selected samples were also variously analyzed for organotins (TBTs), pesticides, polychlorinated biphenyls (PCBs), chlorinated herbicides, and polychlorinated dioxins and dibenzofurans.

Based on analytical results from this study, which showed extensive sediment contamination, EPA is currently considering Portland Harbor for inclusion on the federal National Priority List (NPL - also known as Superfund).

Between late 1998 and mid-1999, DEQ examined EPA's analytical data to determine potential sources for sediment contamination in the Harbor. Potential sources associated with the most contaminated areas of sediment were sites already active in DEQ's Cleanup Programs.

DEQ categorized other areas of sediment contamination (i.e., those areas not thought to be associated with active Cleanup Program sites) by defining the areas:

- having the highest detected concentration of a given contaminant;
- with contaminant concentrations in the upper five percent of a given contaminant's detected concentrations; and
- having contaminant concentrations above an apparent "baseline range" most commonly detected throughout the harbor area.

DEQ categorized in this manner because there are no established freshwater sediment contaminant concentration guidelines or well-defined background contaminant concentrations for the harbor area. The contaminant "baseline range" was developed by examining the geometric distribution of concentrations for each contaminant detected. Any sediment concentrations that appeared to depart significantly from the ranges most commonly detected were suspected of lying near a potential contaminant source.

One shallow sediment sample (SD060) was collected adjacent to the Crawford Street site (Figure 2). As shown on Table 1, contaminant concentrations in sample SD060 that exceed Portland Harbor baseline concentrations include: arsenic, lead, mercury, di-n-butylphthalate, low- and high-molecular weight polynuclear aromatic hydrocarbons (LPAHs and HPAHs, respectively), and organotins.

Shallow sediment sample SD058 collected downstream of the subject property only had elevated levels of di-n-butylphthalate. This suggests that shallow sediment contamination adjacent to the subject property has not migrated beyond the SD058 location.

Shallow sediment sample SD066 collected upstream of the subject property had elevated levels of mercury, zinc, 2-methylnapthalene, LPAHs, and HPAHs. This suggests that an upstream source may have contributed to the mercury, LPAH, and HPAH sediment contamination observed adjacent to the subject property. The Willamette Cove site is adjacent upstream of the subject site and has an extensive history of industrial activities.

### Operational History

The subject site is approximately 15 acres and is divided into two — portions by railroad tracks. There are currently three businesses that operate on the northern portion of the subject property: Columbia Forge and Machine Works, Inc. (CFM), Lampros Steel, Inc., and TLS Steel Products, Inc. The southern portion of the site adjacent to the Willamette River is currently used to store steel; it is not clear which of the three businesses use the southern portion, although it appears that it is used primarily by Lampros Steel.

CFM has produced metal forgings and stampings on the site since 1971. Their operation consists of three buildings and two yards. They use oil, lubricants, non-halogenated petroleum solvent, and degreasers that are sent offsite for recycling and/or disposal.

Lampros Steel has operated a structural steel distribution center since 1989, which includes off-loading railcars and trucks, cutting steel with saws, and loading outgoing trucks. Steel scrap is recycled, used motor oil is sent offsite, and synthetic saw coolant is reused or recycled on site. They have one 1,000-gallon aboveground diesel tank, located about 500 feet from the Willamette River.

TLS has operated a small steel forging and fabrication business since 1989. Hydraulic oil is used in their machines.

Crawford Street Corp. acquired the subject property from the Skookum Logging Supply Company in 1971. Aerial photographs indicate that the current buildings on the subject property were constructed between 1957 and 1963. The southern portion of the site was extensively covered by buildings with docks in photographs from 1936 through 1963; it appears that these structures were removed sometime between 1963 and 1977. Fire insurance maps from 1950 indicate that the property was used primarily by Portland Lumber Mills, and also by the Plylock Corp. (manufacturing with wood), Portland Chain Manufacturing Co., and Skookum Logging Supply Co.

## **Regulatory History**

### ***Spills***

In May 1987, a transformer capacitor at CFM overheated and leaked several ounces of PCB-containing oil. The spill was contained and PCB-impacted material, including the transformer, was shipped offsite for disposal.

Information provided by CFM and TLS indicates that they have minor (less than one gallon) spills of hydraulic, motor, or lubricating oil from machinery on to concrete. These spills are apparently cleaned up and have not caused impacts to soil or groundwater.

Lampros claims they have had no spills.

### ***Underground Storage Tanks (USTs)***

Two 1,000-gallon USTs, one containing gasoline and the other containing used oil, were decommissioned at the CFM site in December 1987. According to CFM, contamination was apparently not observed during decommissioning activities, which predates DEQ UST record-keeping.

### ***Water Quality***

CFM was issued an NPDES permit on October 7, 1992 and it was terminated on October 20, 1992, apparently because a permit was not required at that facility. A CFM stormwater sample collected and analyzed for metals by the Portland Bureau of Environmental Services in June 1997 detected low concentrations of copper (0.010 milligrams per liter), selenium (0.047 mg/L), and zinc (0.065 mg/L).

There are no water discharge permits on file for Lampros or TLS.

### ***Hazardous Waste***

CFM operates as a conditionally exempt small quantity hazardous waste generator and appears to be in compliance.

Lampros and TLS are not registered as hazardous waste generators at DEQ.

## **Site Hydrogeology**

The site lies in the northern-most Portland Basin, a major north-southeast trending sediment filled structural depression found in the northern part of the Willamette River valley and adjoining Columbia River valley (Swanson et al, 1993). The basin is filled with recent alluvium, Pleistocene cataclysmic flood deposits, Miocene to Holocene nonmarine sedimentary rocks, and is underlain by Eocene to Miocene volcanic and sedimentary rocks that are exposed along the basin margins.

The youngest deposits are recent alluvium (silt, sand and gravel mixtures) characteristic of an active fluvial environment. These are made up of shoreline, river channel, and adjacent floodplain deposits.

Terraces that rise 50 to 100 feet above the northeastern shore of the Willamette were formed during Pleistocene cataclysmic flooding related to glacial Lake Missoula, and consist of unconsolidated mixtures of silt, sand, and gravel that generally are coarser than the recent deposits. Fill comprised of fine to medium sands and silt was also placed in many areas along the river during site development. The total thickness of recent alluvium and flood deposits appears to be about 100 feet in the vicinity of the site.

Coarse gravel to conglomerate of the Troutdale Formation, deposited by the ancestral Columbia River, underlies the cataclysmic flood deposits and appears to be about 100 feet thick in the vicinity of the site. Sandy River mudstone underlies the Troutdale Formation and appears to be about 100 feet thick. Basalt of the Columbia River Basalt (CRB) group forms the basement rock of the Portland Basin, and may be as much as several hundred feet thick in the vicinity of the site.

Aquifers in the unconsolidated sedimentary deposits generally are unconfined and localized due to heterogeneity of the deposits. The Troutdale Formation is an important regional aquifer and is widely tapped for both potable and non-potable uses. Interbedded Claystone and/or siltstone, or cementation often promotes confined aquifer conditions within the Troutdale Formation. Deep wells installed in fractured CRB can be very productive and important supply wells. Site elevation is about 30 feet above mean sea level.

#### Pathway Summary

The Crawford Street site lies in an area of mixed industrial, commercial, and residential use. Approximately 123 residences lie within 1/4 mile of the facility.

Site workers at the facility or trespassers could be exposed to contaminants in surface soil. Utility trench workers could potentially be exposed to subsurface contaminants through direct contact, inhalation, or incidental ingestion.

Oregon Water Resources Department has no well logs for domestic wells within one-half mile of the Crawford Street site.

The nearest significant wetland is located three miles downstream of the subject site at the mouth of Multnomah Channel. Cathedral Park is approximately 1,000 feet downstream of the subject site.

Both recreational and subsistence fishing occur within the Lower Willamette River. Commercial fishing within the Portland Harbor is limited to a small Pacific lamprey fishery. Recreational boating, water skiing, swimming, and beach use also occur within the Harbor.

The Lower Willamette River provides habitat for 39 fish species, including populations of wild cutthroat trout, rainbow trout, and mountain whitefish. White sturgeon are plentiful within the Harbor. The Harbor is also an important migratory corridor, nursery habitat, and adult foraging area for two runs of chinook salmon, two runs of steelhead trout, and individual runs of coho and sockeye salmon.

Upper Willamette River populations of chinook and steelhead, which migrate through the Harbor, are listed as threatened species under the Federal Endangered Species Act. The Pacific lamprey is considered a federal species of concern.

Great blue herons, cormorants, osprey, mergansers, kingfishers, peregrine falcons, and bald eagles routinely forage within the Harbor. The area is also part of the wintering range for the Aleutian Canada goose. All are protected under the Migratory Bird Treaty Act. The peregrine falcon is federally listed as an endangered species, while the Aleutian Canada goose is federally listed as threatened species. The bald eagle also is a threatened species, but was recently proposed to be removed from this list.

There is little data on the nature and extent of the benthic community within Portland Harbor sediments. However, it is known that contamination in the benthos, which is a protected beneficial use, can be the source of food-chain effects that radiate up to the species listed above, including humans.

The Lower Willamette River is water quality limited for the following toxic compounds:

- Dioxins/furans (water column and sediments);
- Mercury (fish tissue);
- Pesticides (water column and sediments);
- Polynuclear Aromatic Hydrocarbons - PAHs - (water column and sediments); and
- Trace metals (water column and sediments).

DEQ's Water Quality Division is developing Total Maximum Daily Load requirements (TMDLs) within the lower Willamette River for these contaminants. A TMDL for 2,3,7,8-TCDD was established in 1991.



The youngest deposits are recent alluvium (silt, sand and gravel mixtures) characteristic of an active fluvial environment. These are made up of shoreline, river channel, and adjacent floodplain deposits.

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## Conclusions/Recommendations

NOTE: As indicated previously, this review is limited to establishing a link between site activities and contamination in adjacent Portland Harbor sediments. It does not necessarily represent a thorough review of available site data, and the conclusions and recommendations presented below may reflect this limited focus.

The following conclusions are based on the contents of this review:

- Site activities may have resulted in sediment contamination adjacent to the site. Concentrations of sediment contaminants adjacent to the site that exceed Portland Harbor baseline levels include arsenic, lead, mercury, di-n-butylphthalate, LPAHs, HPAHs, and organotins. PAH contaminants found in the sediment are associated with handling/storage of petroleum products, metals are associated with fabrication activities, and organotins are associated with boat painting maintenance (possibly from historical dock activities or by migration from upland use/storage of organotin-based paints on metal).
- It appears that the subject site is the source of organotins contamination observed adjacent to the site, where the concentration is over twice the Portland Harbor baseline value and 55 times the upstream concentration.
- Contaminant concentrations for mercury, LPAHs, and HPAHs observed in the upstream sediment sample are generally equal to or greater than in the sample adjacent to the Crawford Street site. This suggests that historical activities at the upstream adjacent Willamette Cove site may have contributed towards contamination observed adjacent to the subject site.
- Use of the site's historical docks, possibly for conveyance of materials and boat fueling and maintenance, is a possible source of sediment contamination by routine or accidental activities.

Contamination of river sediments adjacent to the Crawford Street site may represent a threat to human health and aquatic life within the river. An Expanded Preliminary Assessment (XPA) on the entire Crawford Street property (CFM, Lampros, TLS, and the southern portion of the property) should be conducted to evaluate sediment contamination, potential upland site contaminant sources, and past waste management practices and to determine the extent and source(s) of observed sediment contamination. Sediment sampling should include subsurface samples to further define the extent of contamination. As necessary, the XPA should present recommendations

aimed at preventing potential further contamination of adjacent sediment. DEQ has determined that these actions warrant a high priority for follow-up.

There is insufficient information to propose adding the site to DEQ's Confirmed Release List or Inventory.

### References

DEQ consulted the following general references in preparing this Strategy Recommendation:

1. Portland Harbor Sediment Investigation Report, prepared by Roy F. Weston, Inc. for USEPA, May 1998.
2. Columbia Forge and Machine Works, Inc. response to DEQ Site Assessment Information Request, April 9, 1999.
3. Lampros Steel, Inc. response to DEQ Site Assessment Information Request, March 15, 1999.
4. TLS Steel Products, Inc. response to DEQ Site Assessment Information Request, March 19, 1999.
5. DEQ LUST Database.
6. DEQ HWIMSY Hazardous Waste Generator Database.
7. DEQ SPINS Spill Database.
8. MetroScan Property Records, Multnomah County, Oregon.

### Attachments

Table 1: River Sediment Contaminant Concentrations

Figure 1: Site Location Map

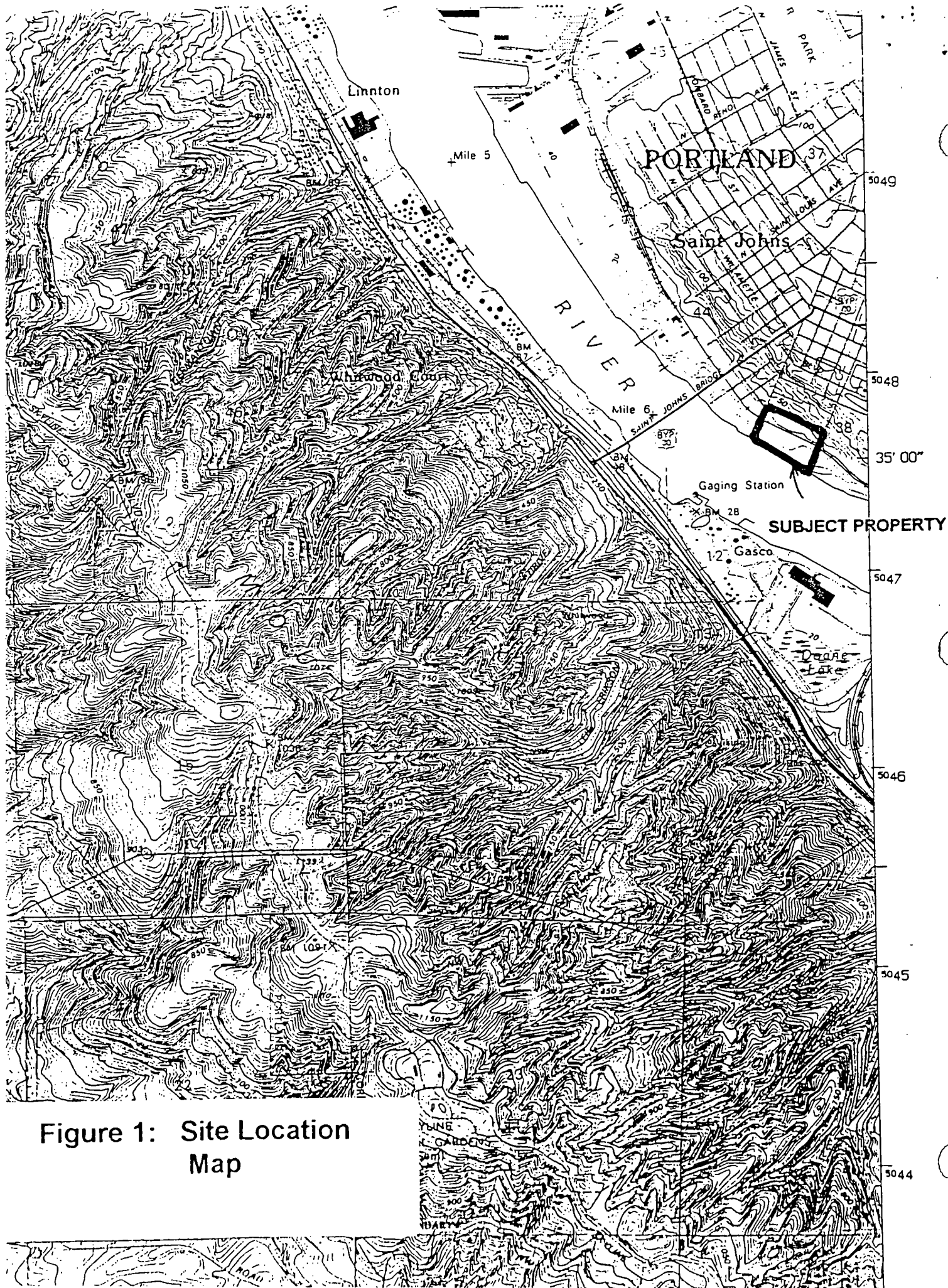
Figure 2: Sediment Sampling Points, 1997 Portland Harbor Sediment Investigation

TABLE 1

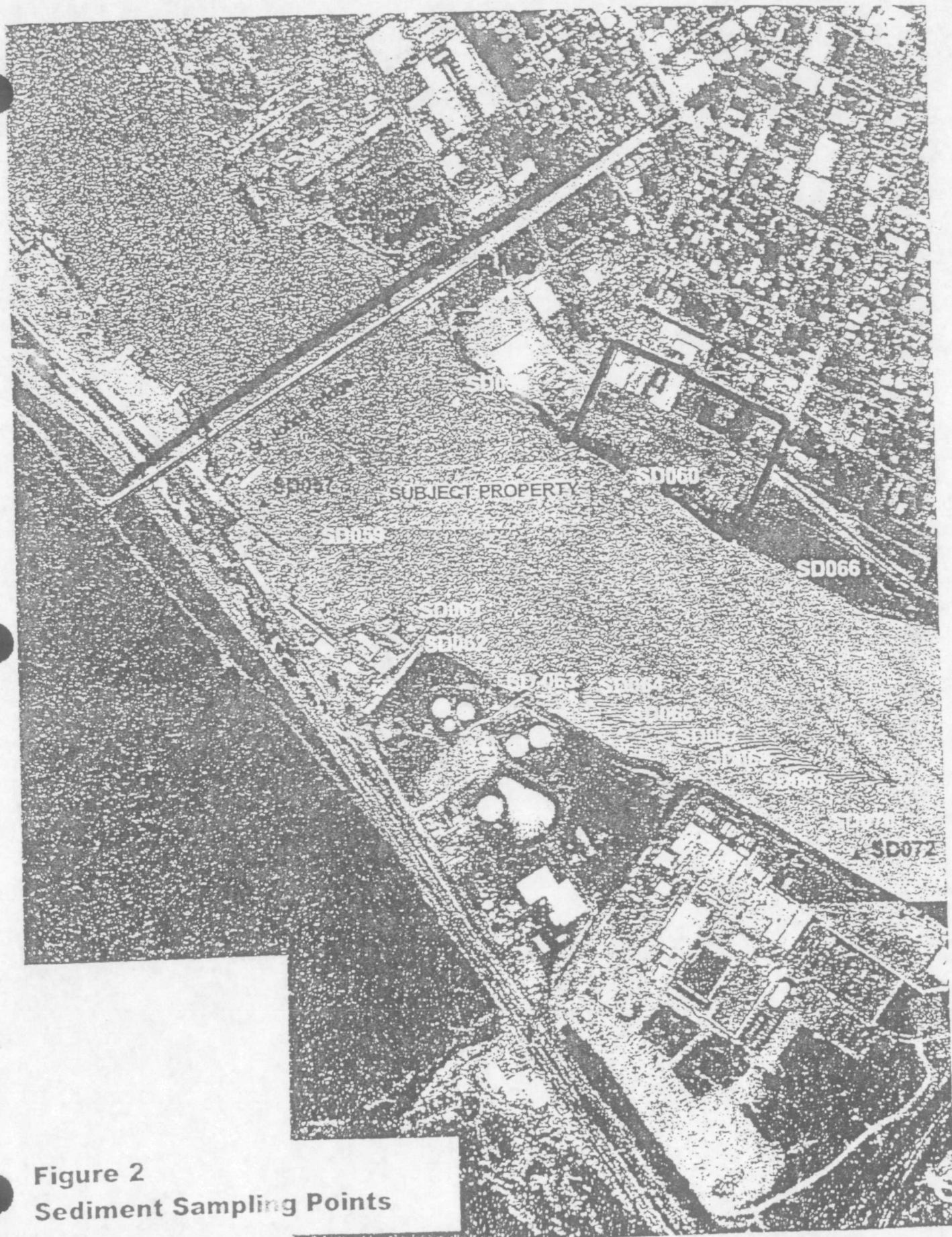
# River Sediment Contaminant Concentrations (1997) Crawford Street Corporation

Contaminant	Units	Down-Stream SD058	Crawford Street SD060	Up-Stream SD066	Apparent Portland Harbor Sediment Baseline Maximum Value
Aluminum	ppm	22800	24700	33200	42800
Antimony	ppm	<4	NA	NA	<5
Arsenic	ppm	<4	5	5	<5
Barium	ppm	126	152	163	195
Beryllium	ppm	0.4	0.5	0.6	0.7
Cadmium	ppm	0.3	0.4	0.5	0.6
Chromium	ppm	25	28	35	41
Cobalt	ppm	16	11	18	19.7
Copper	ppm	30	50	41	60
Iron	ppm	31700	32700	37600	45000
Lead	ppm	13	36	28	30
Manganese	ppm	322	397	547	810
Mercury	ppm	0.1	0.14	0.23	0.1
Nickel	ppm	24	21	29	32
Selenium	ppm	11	12	11	15
Silver	ppm	0.7	0.8	1.0	1.4
Thallium	ppm	5	<4	<4	13
Titanium	ppm	1650	NA	1910	2075
Vanadium	ppm	80	85	98	112
Zinc	ppm	87	112	158	118
2-Methylnaphthalene	ppb	37	66	180	150
4-Methylphenol	ppb	50	230	130	680
Benzoic Acid	ppb	<200	<200	<190	<200
Benzyl Alcohol	ppb	<20	<20	<19	<20
bis(2-Ethylhexyl)phthalate	ppb	<90	<190	<88	390
Butylbenzylphthalate	ppb	<20	<20	<19	<20
Carbazole	ppb	48	99	<19	100
Di-N-Butylphthalate	ppb	43	34	<19	<20
Di-N-Octylphthalate	ppb	<20	<20	<19	<20
Dibenzofuran	ppb	24	33	57	100
Dimethylphthalate	ppb	<20	<20	<19	<20
Pentachlorophenol	ppb	<99	<99	<96	Detect
Phenol	ppb	<20	<20	<19	<20
LPAHs (total)	ppb	379	873	1904	700
HPAHs (total)	ppb	2333	4448	4481	2400
DDTs (total)	ppb	4.1	NA	7.5	220
PCBs (total)	ppb	<40	NA	54	<180
Organotins (total)	ppb	170	773	14	300
2,4-D	ppb	NA	NA	NA	<3.3
2,4-DB	ppb	NA	NA	NA	<5
TOC	%	2.6	0.9	1.6	2
Water Depth	ft	45	9	17	
Sediment Sample Depth	cm	0-10	0-10	0-10	

NA = Not Analyzed







**Figure 2**  
**Sediment Sampling Points**